

PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON

FIVE NEW WOODRATS OF THE GENUS *NEOTOMA*
FROM MEXICO.

BY E. A. GOLDMAN.

Recent study of the large series of woodrats in the Biological Survey Collection has resulted in the discovery of four undescribed subspecies—three members of the *Neotoma intermedia* group, and a high mountain form of *Neotoma ferruginea*. Through the kindness of Mr. Outram Bangs I am able to include also a description of a well-marked species collected for Mr. John E. Thayer, on the small island of San Francisco in the Gulf of California.

***Neotoma intermedia pretiosa* subsp. nov.**

Type from Matancita (called also Soledad), 50 miles north of Magdalena Bay, Lower California, Mexico (altitude 100 feet). No. 146,123, U. S. National Museum, Biological Survey Collection. ♂ adult. Collected November 17, 1905, by E. W. Nelson and E. A. Goldman. Original number 18,589.

General characters.—Size much larger and color paler than *N. intermedia*. Similar in size to *N. i. arenacea*, but color paler; tail shorter; audital bullæ larger.

Color.—Worn pelage: Upper parts very pale drab gray, purest along cheeks and sides, overlaid on top of head and back by dusky or rusty hairs; feet and underparts white; tail blackish above, grayish below.

Skull.—Similar in general to that of *N. intermedia*, but very much larger and more angular; supraorbital ridges more prominent. In size the skull is similar to that of *N. i. arenacea*, but dentition heavier; bullæ much larger.

Measurements.—Average of 6 adult topotypes: Total length, 374; tail vertebrae, 166; hind foot, 39.3. Skull: Basilar length, 39.4; zygomatic breadth, 24.6; length of nasals, 18.2; alveolar length of upper molar series, 9.3.

***Neotoma intermedia perpallida* subsp. nov.**

Type from San Jose Island, off east coast of Lower California, Mexico.

No. 79,061, U. S. National Museum, Biological Survey Collection. ♂ young adult. Collected August 4, 1895, by J. E. McLellan. Original number 1449.

General characters.—Most nearly related to *N. i. vicina*, but color still paler and tail averaging slightly longer; skull about the same. Similar in color to *N. i. gilva*, but underparts purer white and tail not basally buffy; tail more scantily haired; skull differing in details.

Color.—Nearly fresh pelage: Upperparts drab gray, paler than in *vicina*, moderately darkened over back by black or brownish hairs; feet and underparts white; tail brownish above, grayish below.

Skull.—About like that of *N. i. vicina*, much as in *N. intermedia* and *N. i. gilva*, but somewhat larger; bullæ slightly smaller.

Measurements.—Average of 6 adults: Total length, 359; tail vertebrae, 172; hind foot, 35. Skull (average of 4 adults): Basilar length, 31; zygomatic breadth, 22; length of nasals, 16.8; alveolar length of upper molar series, 8.6.

Remarks.—The Biological Survey Collection contains 2 specimens of this form. Mr. Outram Bangs has kindly furnished for examination a fine series of additional specimens—11 skins and skulls collected on San Jose Island by Mr. W. W. Brown, Jr., in June, 1908, and February, 1909, for Mr. John E. Thayer.

***Neotoma intermedia vicina* subsp. nov.**

Type from Espiritu Santo Island, off east coast of southern Lower California, Mexico. No. 146,803 U. S. National Museum, Biological Survey Collection. ♂ adult, collected February 9, 1906, by E. W. Nelson and E. A. Goldman. Original number 19,082.

General characters.—Most nearly related to *N. i. perpallida*, but color darker and tail averaging slightly shorter. Somewhat similar to *N. i. arenacea*, but smaller; color paler; audital bullæ relatively larger.

Color.—Fresh pelage: Upperparts dull grayish or brownish drab, lighter along cheeks and sides, moderately darkened over top of head and back by overlying dusky hairs; feet and underparts white; tail blackish above, grayish below.

Skull.—About as in *N. i. perpallida*. Differing from that of *N. i. arenacea* in smaller size, relatively heavier dentition, and relatively larger bullæ.

Measurements.—Average of 5 adult topotypes: Total length, 344; tail vertebrae, 162; hind foot, 34.5. Skull (average of 4 adults): Basilar length, 35.6; zygomatic breadth, 22.8; length of nasals, 16.4; alveolar length of upper molar series, 8.1.

***Neotoma abbreviata* sp. nov.**

Type from San Francisco Island (near San Jose Island), off east coast of southern Lower California, Mexico. No. 12,260 Museum of Comparative Zoology. ♂ adult. Collected February 22, 1909, by W. W. Brown, Jr. (John E. Thayer Expedition).

General characters.—Size small; color very pale; tail decidedly shorter than head and body—shorter than in any other known member of the

intermedia group. Somewhat like *N. intermedia*, but size smaller, color very much paler, tail relatively shorter and skull very different. Similar in color to *N. i. perpallida* of the neighboring island of San Jose, but not very nearly related; size smaller; tail relatively shorter; skull differing in numerous details.

Color.—Fresh pelage: Upperparts pale drab gray, palest along cheeks and sides, the dark hairs over top of head and back scarcely numerous enough to alter the general color, but producing a grizzled effect; posterior part of back suffused with cinnamon or pale rusty; underparts dull white, the fur basally plumbeous; feet white; tail pale grayish above, white below.

Skull.—Somewhat like that of *intermedia*, but smaller and more angular; frontals narrower posteriorly, the constriction nearer middle; bullæ shorter; more rounded; posterior border of palate slightly emarginate (evenly convex in *intermedia*); mastoid process of squamosal less spatulate or broadened at tip, leaving mastoid more exposed below lateral extension of supraoccipital. Compared with that of *perpallida* the skull of *abbreviata* is decidedly smaller; nasals broader and more rounded posteriorly, frontals relatively narrower posteriorly, the constriction nearer middle; incisive foramina more decidedly longer than palatal bridge; bullæ shorter, more rounded.

Measurements.—Average of 6 adult topotypes: Total length, 304; tail vertebræ, 130; hind foot, 33. Skull (average of 5 adults): Basilar length, 34.1; zygomatic breadth, 21.6; length of nasals, 15.4; alveolar length of upper molar series, 8.4.

***Neotoma ferruginea chamula** subsp. nov.**

Type from mountains near San Cristobal, Chiapas, Mexico. Altitude 8,400 feet. No. 76,061, U. S. National Museum, Biological Survey Collection. ♂ adult. Collected September 29, 1895, by E. W. Nelson and E. A. Goldman. Original number 8489.

General characters.—Size large; closely related to *N. ferruginea*, but color much darker; fur of underparts basally plumbeous everywhere. Similar in size to *N. f. isthmica*, but color decidedly darker.

Color.—Type: Upperparts tawny cinnamon rufous, purest along sides, rather heavily darkened by black-tipped hairs which are most abundant over back; outer sides of legs dark hair brown, the hind legs tinged with brownish buff; underparts dull white; nose, lips and ankles dusky; fore feet white; hind feet clouded with dusky to toes, the toes white; tail blackish above, grayish brown below.

Skull.—Closely resembling that of *N. ferruginea*. Similar to that of *N. f. isthmica*, but less massive and less arched across anterior roots of zygomata; nasals narrower posteriorly.

Measurements.—Type: Total length, 363; tail vertebræ, 178; hind foot, 39. Skull: Basilar length, 37.1; zygomatic breadth, 23; length of nasals, 18.3; alveolar length of upper molar series, 9.3.

* From Chamula, the name of a tribe of Indians living at the type locality.